Celiac disease and its consequences in food production

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OBJECTIVES

- To study the **physiology** and **histology** of the human gastrointestinal tract, more specifically, the **small intestine** and its features and functions.
- To describe **pathophysiology of the celiac disease (CD)** and to relate the disease to other aspects such as its epidemiology, symptomatology, environmental influences…
- To present the **current European and National Laws** related to gluten-free products.
- To study how the system manages everything that refers to CD in **food industry** through the implantation of **Allergen Plan** and how **catering** get the "gluten-free".

CONCLUSIONS

After understand how physiological mechanisms work

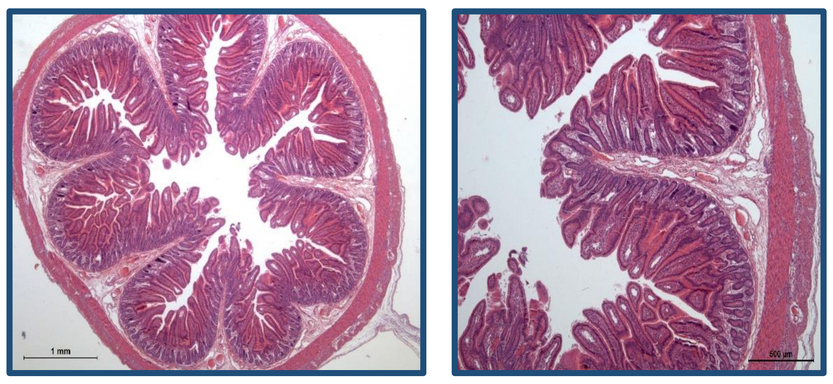

Figure 1. Healthy pig's jejunum photographies with hematoxylin eosin staining. Pathological Anatomy Department, UAB.

The **treatment** of people with a CD diagnostic is eating a **gluten-free diet**.

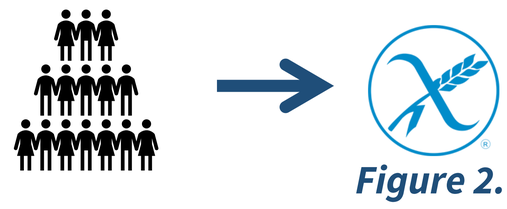

Figure 2.

There are **healthy people** who choose to eat without gluten in their diet. From the physiological point of view, no diagnosed people for CD, **can eat gluten** without compromising their health.

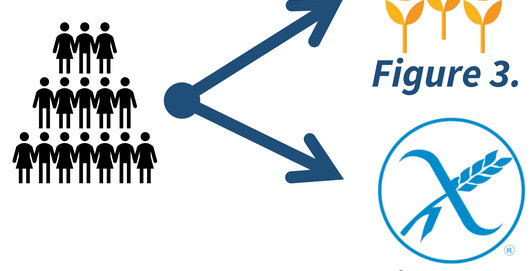

Figure 3.

Figure 2.

Without the incidence of CD, the **food industry** does not allocate **economic funds** to the development of gluten-free products that satisfy the increasing demand.

In Regulation (EC) nº 828/2014 and Regulation (EC) nº 41/2009 they call CD as ***gluten intolerance***.

- Food Industry: Implementation of an **Allergen Control Programme** (ACP).
- Catering: Implementation of **Guidelines for Hygienic Practices** (GHP).

It is an **autoimmune disease**

CD is confused with a

- **Food allergy**
- **Food intolerance**

Table 1. Mentions that can be included in the labels of food products established by Regulation nº 828/2014 (EU).

<<Gluten-free>>: When the food in its final form does not contain more than 20 mg/kg of gluten.
<<Low in gluten>>: When the food in its final form do not contain more than 100 mg/kg of gluten.

Figure 2. Federación de Asociaciones de Celíacos de España (FACE) symbol. https://celiacos.org/que-hacemos/certificacion-alimentaria-sin-gluten/sistema-de-licencia-europeo-els-o-espiga-barrada/

Figure 3. Ear digital draw http://desigenia.com/nuestras-soluciones/soluciones-energias-renovables/sistema-de-bombeo-solar/wheat-2/